

“Hard Skills” courses of the Ph.D. in Physics

(*) Topic Macro-area

1 = Experimental Physics of Matter

2 = Theoretical Physics of Matter

3 = Physics of Complex Systems

4 = High energy Physics

INT = Interdisciplinary

() Frequency**

A = every year

B1 = every second year, on even/odd academic years (i.e. in 2020/2021, 2022/2023,...)

B2 = every second year, on odd/even academic years (i.e. in 2021/2022, 2023/2024,...)

U=unspecified by the teacher

CODE	COURSE TITLE	TEACHER	MACRO-AREA (*)	FREQUENCY (**)	HOURS
01UHYKG	Biological and vehicular traffic: stochastic models	Alessandro Pelizzola	3	A	20
02MLIKG	Corso seminariale del dottorato di ricerca in fisica	Renato Gonnelli & R.Iotti	INT	A	25
01TSFKG	Scanning probe microscopy for physics and engineering	Renato Gonnelli	1	A	30
01RPVKG	Plasma physics	Francesco Porcelli	4	A	30
01TSGKG	The Monte Carlo method	Fausto Rossi	INT	A	30
01QCOKG	Introduction to quantum optics and quantum technologies	Marco Genovese	1	A	25
01TRUKG	Coherent-state approach to quantum systems	Vittorio Penna	2	B1	20
01TSHKG	High energy nuclear astrophysics	Andrea Lavagno	4	B1	20

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01TSCKG	Elements of field theory	Laura Andrianopoli	INT	B1	30
02MLUKG	Fisica della superconduttività	Giovanni Ummarino	2	B1	20
02LCRKG	Physics of surfaces and Interfaces	Giancarlo Cicero	1	B1	15
01MLTKG	Teoria dei gruppi ed alcune sue applicazioni	Mario Trigiane	INT	B1	20
01TSEKG	Quantum Physics at the mesoscale	Fabrizio Dolcini	2	B1	21
01SCKKG	Introduzione alla Meccanica Statistica generalizzata	Giorgio Kaniadakis	INT	B1	30
01MLRKG	Nonextensive statistical mechanics	Antonio Scarfone	3	B1	10
01MLOKG	Quantum mechanics of many-body systems	Vittorio Penna	INT	B2	30
01QCNKG	Electronic properties of graphene	Fabrizio Dolcini	2	B2	20
01NBTKG	Introduction to computational biology	Andrea Pagnani	3	B2	20
01SZPKG	Introduction to electron microscopy	Angelica Chiodoni	1	B2	23
01QCTKG	Introduction to the Hamiltonian formulation of classical and quantum systems	Franceco Raffa	INT	B2	20
01DNRKG	Computational Materials Science	Giancarlo Cicero	2	B2	30
01ROOKG	Introduction to belief propagation	Marco Pretti	3	B2	10
01UMEKG	Principles of deep learning	R. Zecchina & C.Lucibello	3	U	20
01RELKG	Probabilità applicata e machine learning	R. Zecchina & C.Lucibello	3	U	20
01DMMKG	Impedance spectroscopy for electrochemical processes	A.Ionescu	1	Only 2021/22	20
01DMLKG	Introduction to optical microscopy	L. Evangelista	1	Only 2021/22	20